

WHAT IS CLAIMED IS:

1. A method, comprising:

sending, from a distributed agent located in a segment of a network to a network health monitoring mechanism, a heartbeat signal;  
receiving, by the network health monitoring mechanism, the heartbeat signal; and  
determining the health of the segment of the network according to the deviation of the heartbeat signal from a baseline pattern.

2. The method according to claim 1, wherein the sending the heartbeat signal comprises:

generating the heartbeat signal according to a pre-determined configuration; and  
transmitting the heartbeat signal according to a pre-configured timing.

3. The method according to claim 1, wherein the determining the health comprises:  
extracting, by the network health monitoring mechanism, content from the heartbeat signal, received by the receiving;

retrieving the baseline pattern;  
analyzing the deviation between the heartbeat signal and the baseline pattern; and  
verifying the health of the segment of the network based on the deviation.

4. A method for a distributed agent, comprising:  
generating a heartbeat signal containing content specified by a pre-determined configuration; and

transmitting the heartbeat signal according to a timing.

5. The method according to claim 4, further comprising:

performing the pre-determined configuration; and

setting up a timer that controls the timing of the transmitting.

6. A method for monitoring network health, comprising:

receiving a heartbeat signal from a distributed agent located in a segment of a network; and

determining the health of the segment of the network based on the deviation of the heartbeat signal from a baseline pattern.

7. The method according to claim 6, wherein the receiving a heartbeat signal comprises:

listening to the distributed agent; and

intercepting the heartbeat signal when the distributed agent sends the heartbeat signal.

8. The method according to claim 6, wherein the determining the health comprises:

extracting content from the heartbeat signal, received by the receiving;

retrieving the baseline pattern;

analyzing the deviation between the heartbeat signal and the baseline pattern; and

verifying the health of the segment of the network based on the deviation.

9. The method according to claim 8, further comprising:

identifying, prior to the retrieving, the segment of the network based on received heartbeat signal;

reporting the health of the segment of the network based on the result from the verifying; and

updating the baseline pattern based on the deviation.

10. A system, comprising:

a plurality sets of agents distributed in a network for sending heartbeat signals, wherein each set of agents is located within a segment of the network;

a network health monitoring mechanism for monitoring the health of different segments of the network based on the deviation between the heartbeat signals, received from the agents located in the segments, and one or more baseline patterns representing the normal health of the network.

11. The system according to claim 10, wherein each of the agents comprises:

a heartbeat signal generator for generating a heartbeat signal containing content specified by a pre-determined configuration;

a timer for controlling the timing of transmitting the heartbeat signal; and

a heartbeat transmitter for transmitting the heartbeat signal according to the timing specified by the timer.

12. The system according to claim 11, further comprising:

a configuration mechanism for performing the pre-determined configuration and for setting up the timer.

13. The system according to claim 10, wherein the network health monitoring mechanism comprises:

a heartbeat listener for listening to the plurality sets of agents and for receiving a heartbeat signal from a distributed agent located in a segment of the network; and

a heartbeat analysis mechanism for determining the health of the segment of the network based on the deviation of the heartbeat signal from a baseline pattern.

14. The system according to claim 13, further comprising:

a network health reporting mechanism for reporting and recording the information related to the health of the network.

15. A system for an agent, comprising:

a heartbeat signal generator for generating a heartbeat signal containing content specified by a pre-determined configuration;

a timer for controlling the timing of transmitting the heartbeat signal; and

a heartbeat transmitter for transmitting the heartbeat signal according to the timing specified by the timer.

16. The system according to claim 15, further comprising:

a configuration mechanism for performing the pre-determined configuration and for setting up the timer.

17. A network health monitoring mechanism, comprising:

a heartbeat listener for listening to a plurality sets of agents, distributed in at least one segment of a network, and for receiving a heartbeat signal from a distributed agent located in a segment of the network; and

a heartbeat analysis mechanism for determining the health of the segment of the network based on the deviation of the heartbeat signal from a baseline pattern.

18. The mechanism according to claim 17, wherein the heartbeat analysis mechanism comprises:

a heartbeat content extractor for extracting content from the heartbeat signal;

a deviation detector for detecting the deviation between the heartbeat signal and the baseline pattern; and

a network health determiner for determining the health of the segment of the network based on the deviation.

19. The mechanism according to claim 18, further comprising:

a network segment identifier for identifying the segment from where the heartbeat signal is received;

a baseline pattern retriever for retrieving the baseline pattern corresponding to the segment of the network; and

a network health reporting mechanism for reporting and recording the information related to the health of the network.

20. The mechanism according to claim 19, further comprising:

a baseline updating mechanism for updating the baseline pattern based on the deviation and the information related to the health of the network.

21. A computer-readable medium encoded with a program, the program, when executed, causing:

sending, from a distributed agent located in a segment of a network to a network health monitoring mechanism, a heartbeat signal;

receiving, by the network health monitoring mechanism, the heartbeat signal; and

determining the health of the segment of the network according to the deviation of the heartbeat signal from a baseline pattern.

22. The medium according to claim 21, wherein the sending the heartbeat signal comprises:

generating the heartbeat signal according to a pre-determined configuration; and

transmitting the heartbeat signal according to a pre-configured timing.

23. The medium according to claim 21, wherein the determining the health comprises:

extracting, by the network health monitoring mechanism, content from the heartbeat signal, received by the receiving;

retrieving the baseline pattern;  
analyzing the deviation between the heartbeat signal and the baseline pattern; and  
verifying the health of the segment of the network based on the deviation.

24. A computer-readable medium encoded with a program for a distributed agent, the program, when executed, causing:

generating a heartbeat signal containing content specified by a pre-determined configuration; and

transmitting the heartbeat signal according to a timing.

25. The medium according to claim 24, the program, when executed, further causing:

performing the pre-determined configuration; and

setting up a timer that controls the timing of the transmitting.

26. A computer-readable medium, encoded with a program for monitoring network health, the program, when executed, causing:

receiving a heartbeat signal from a distributed agent located in a segment of a network; and

determining the health of the segment of the network based on the deviation of the heartbeat signal from a baseline pattern.

27. The medium according to claim 26, wherein the receiving a heartbeat signal comprises:

listening to the distributed agent; and

intercepting the heartbeat signal when the distributed agent sends the heartbeat signal.

28. The medium according to claim 26, wherein the determining the health comprises:

extracting content from the heartbeat signal, received by the receiving;

retrieving the baseline pattern;

analyzing the deviation between the heartbeat signal and the baseline pattern; and

verifying the health of the segment of the network based on the deviation.

29. The medium according to claim 28, the program, when executed, further causing:

identifying, prior to the retrieving, the segment of the network based on received heartbeat signal;

reporting the health of the segment of the network based on the result from the verifying; and

updating the baseline pattern based on the deviation.